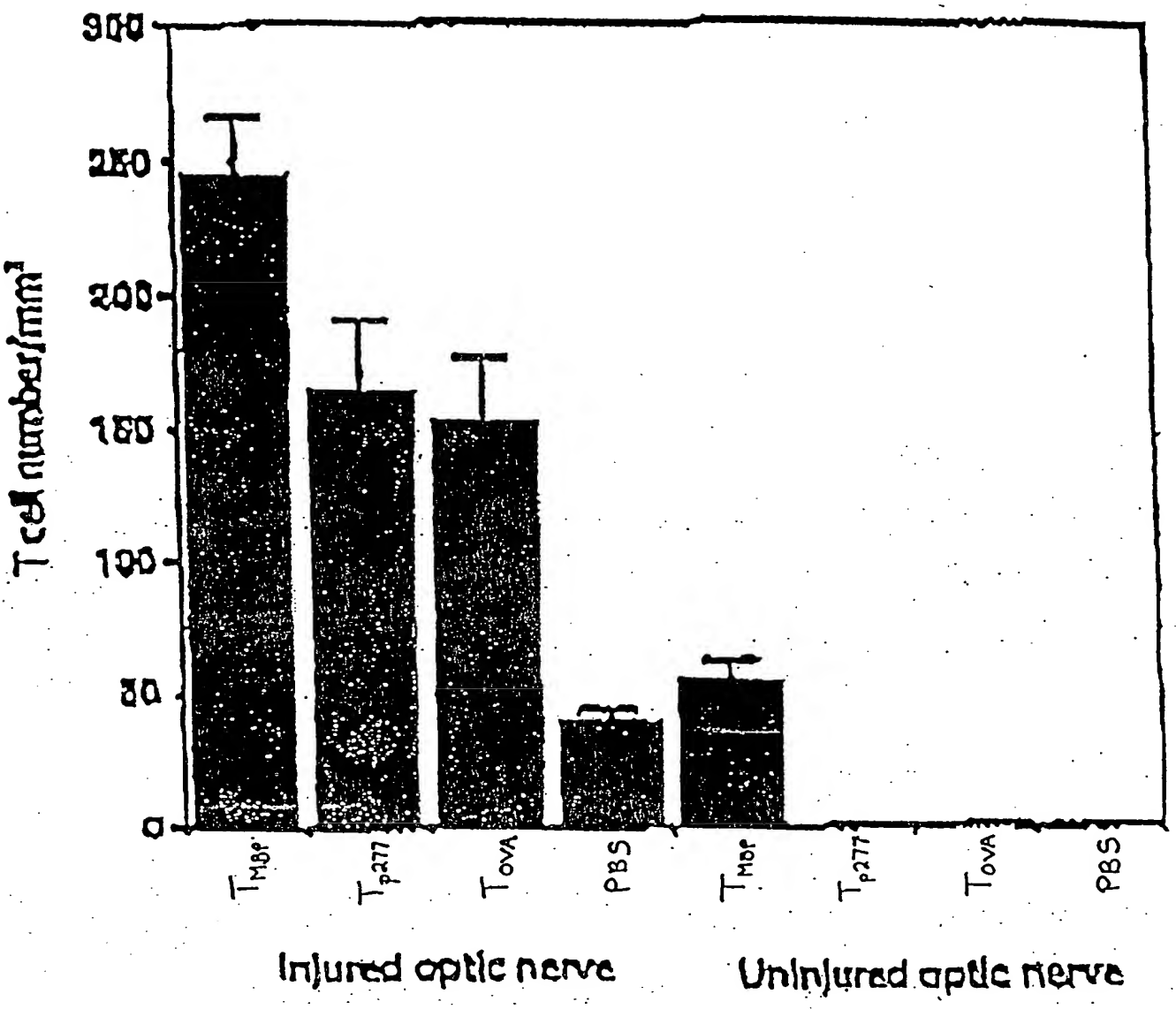
300
250
200
150
100
50
0
T cell number/mm²
T_{MBP}
T_{p277}
T_{OVA}
PBS
T_{MBP}
T_{p277}
T_{OVA}
PBS
Injured optic nerve
Uninjured optic nerve

FIG. 1

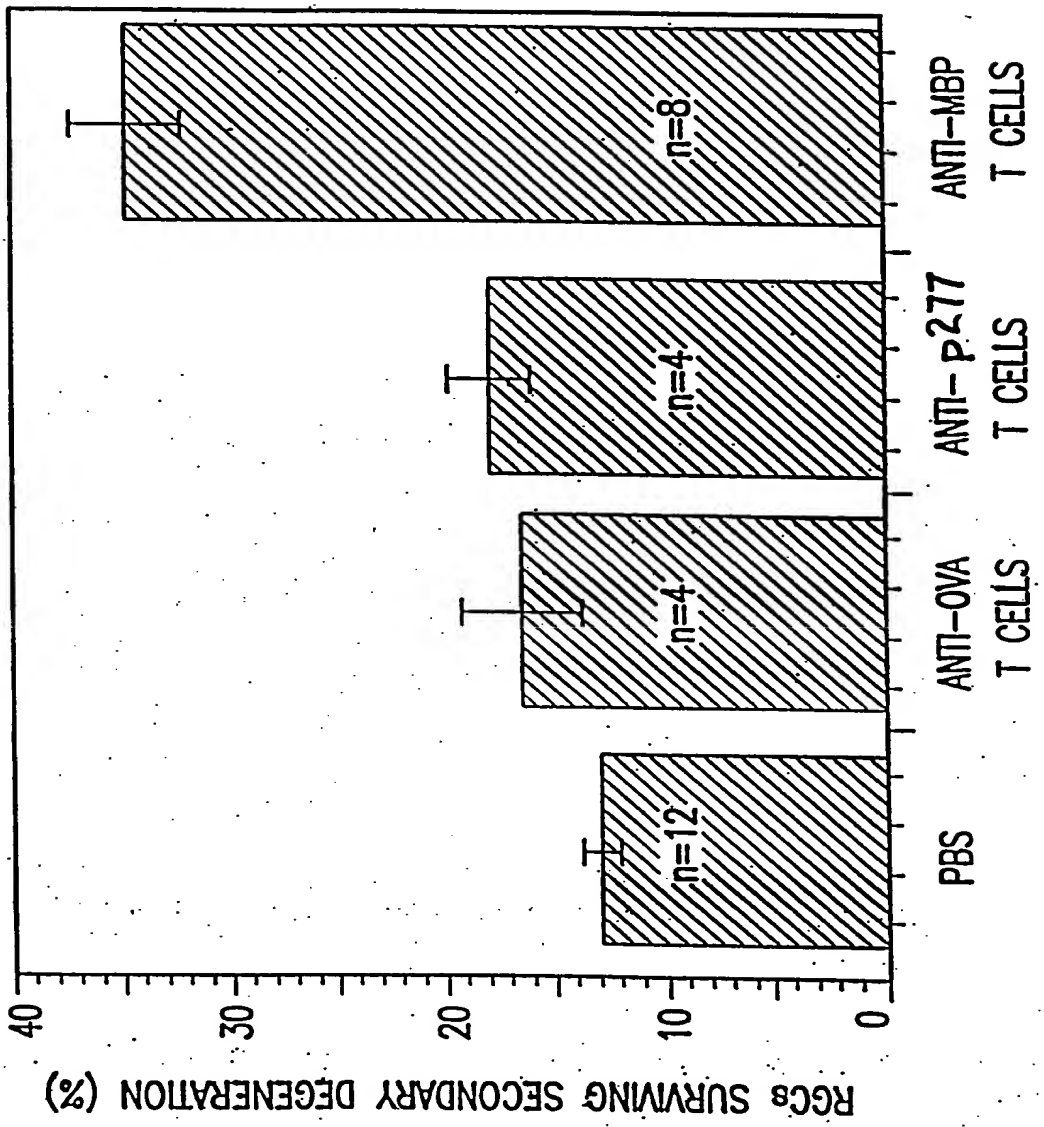
RGCs SURVIVING SECONDARY DEGENERATION (%)
0
10
20
30
40
n=12
n=4
n=4
n=8
PBS
ANTI-OVA T CELLS
ANTI-P277 T CELLS
ANTI-MBP T CELLS

FIG. 2

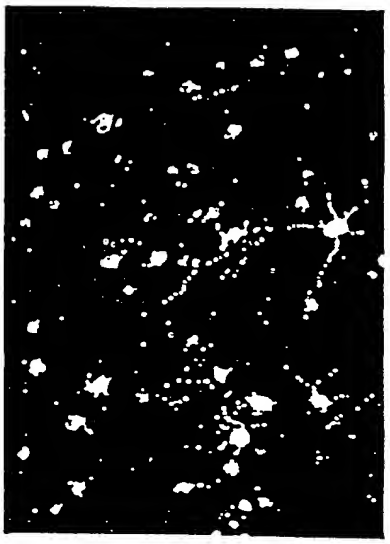

FIG. 3C

FIG. 3B

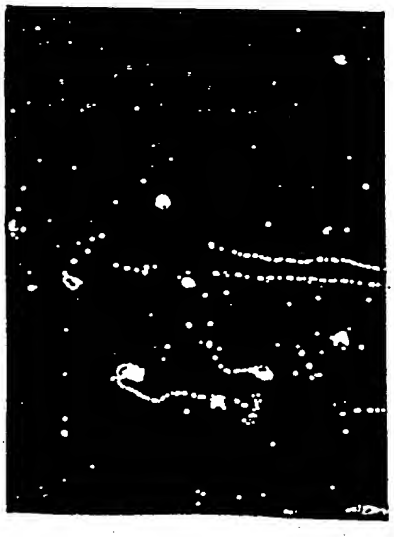

FIG. 3A

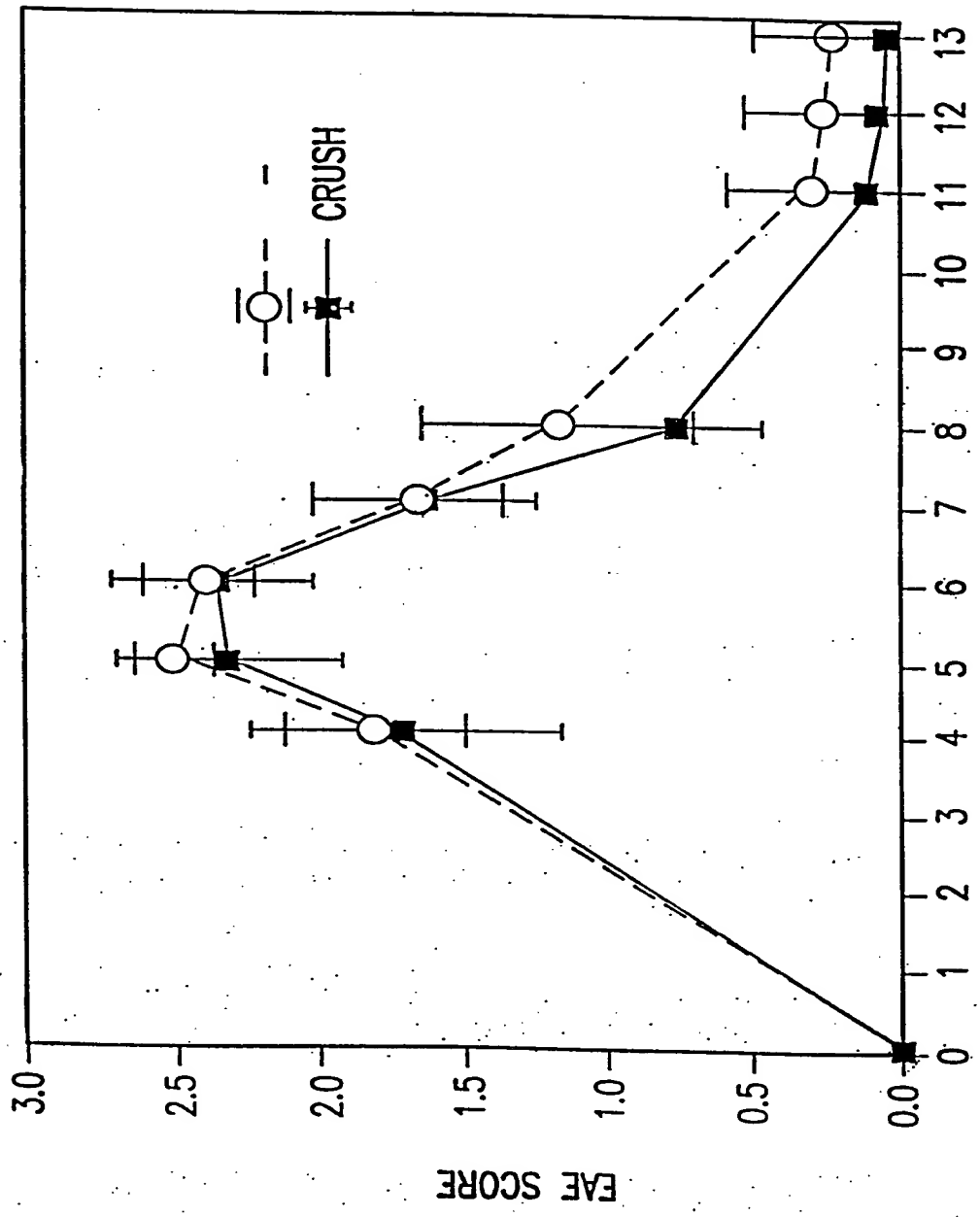

FIG. 4A

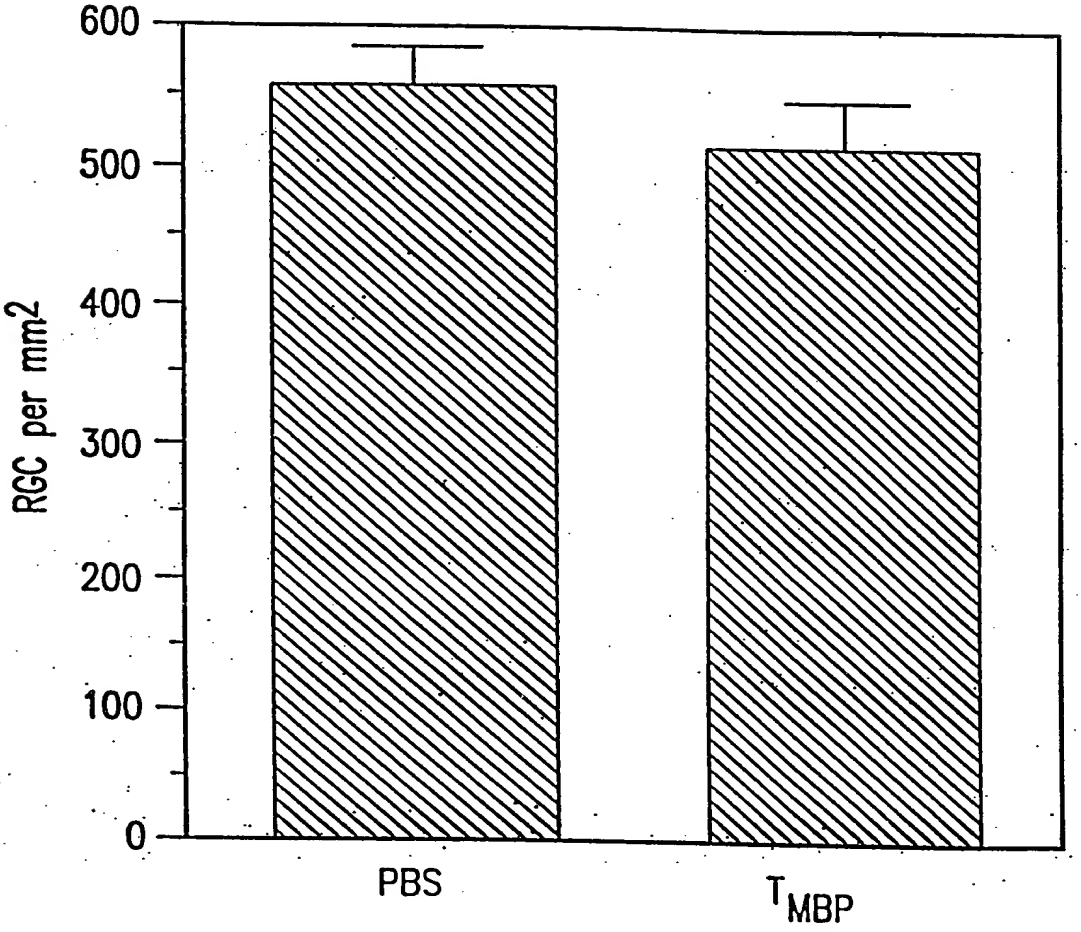

FIG. 4B

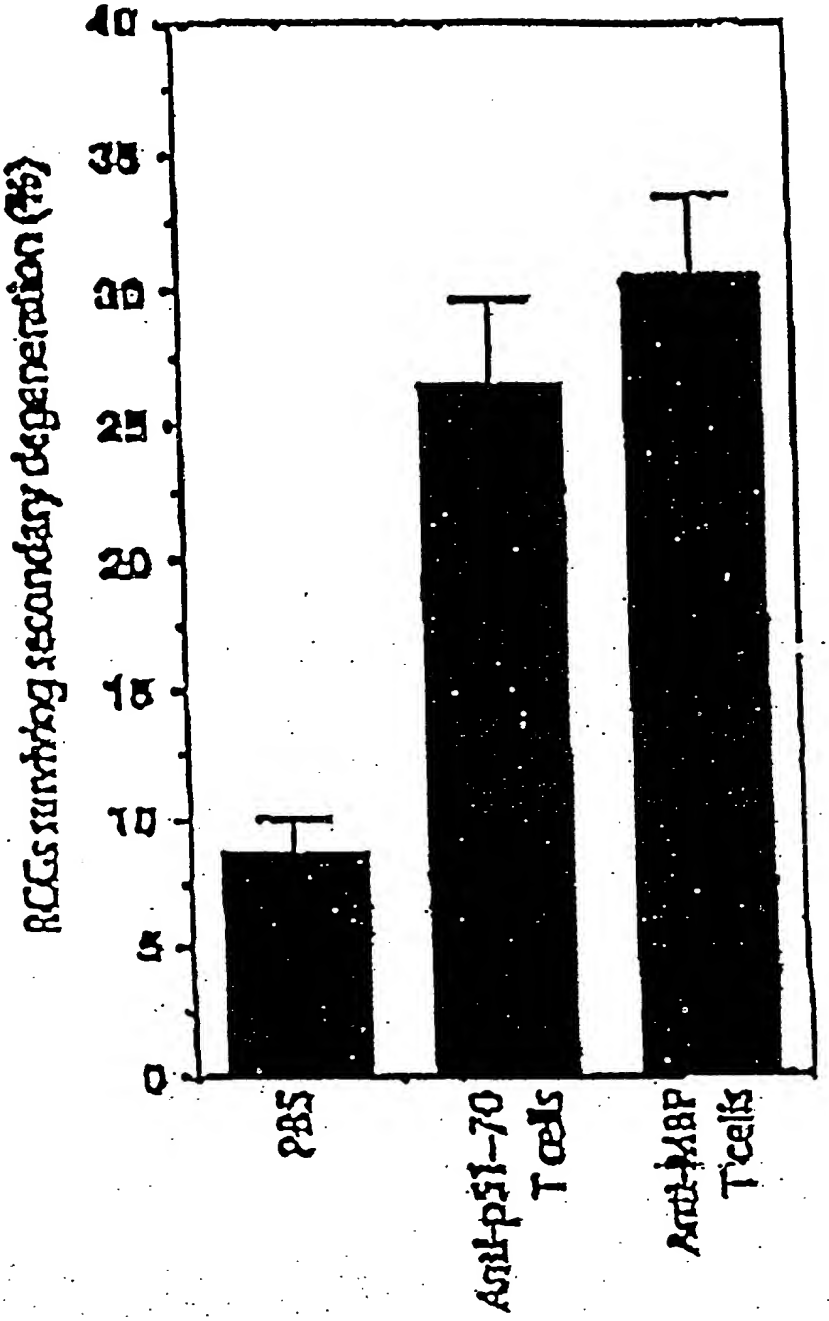
RCS running secondary degeneration (%)
0
5
10
15
20
25
30
35
40
PBS
Anti-p51-70 T cells
Anti-MBP T cells

FIG. 5

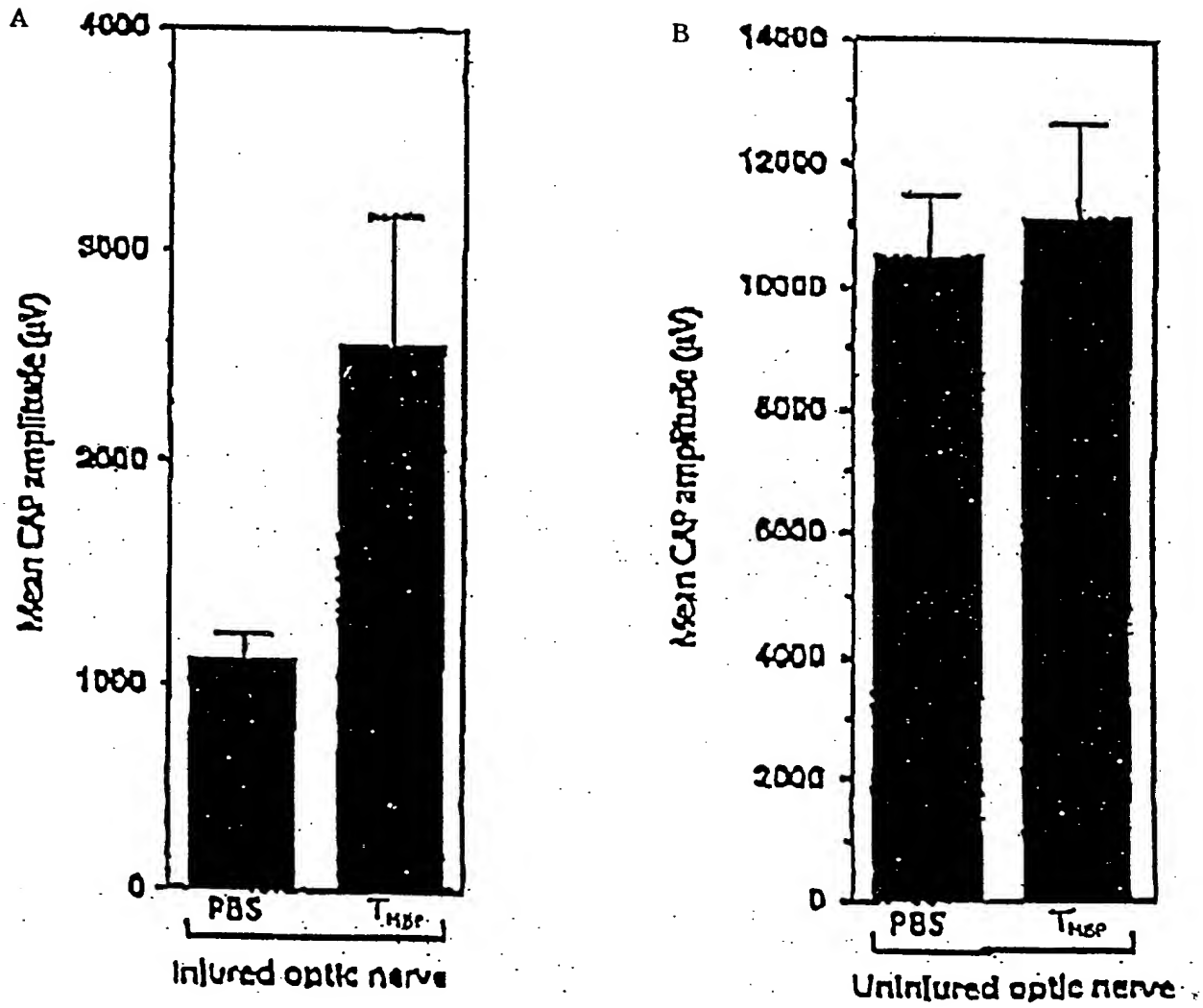
A
4000
3000
2000
1000
0
Mean CAP amplitude (μV)
PBS
T_{HSP}
Injured optic nerve
B
14000
12000
10000
8000
6000
4000
2000
0
Mean CAP amplitude (μV)
PBS
T_{HSP}
Uninjured optic nerve

FIG. 6

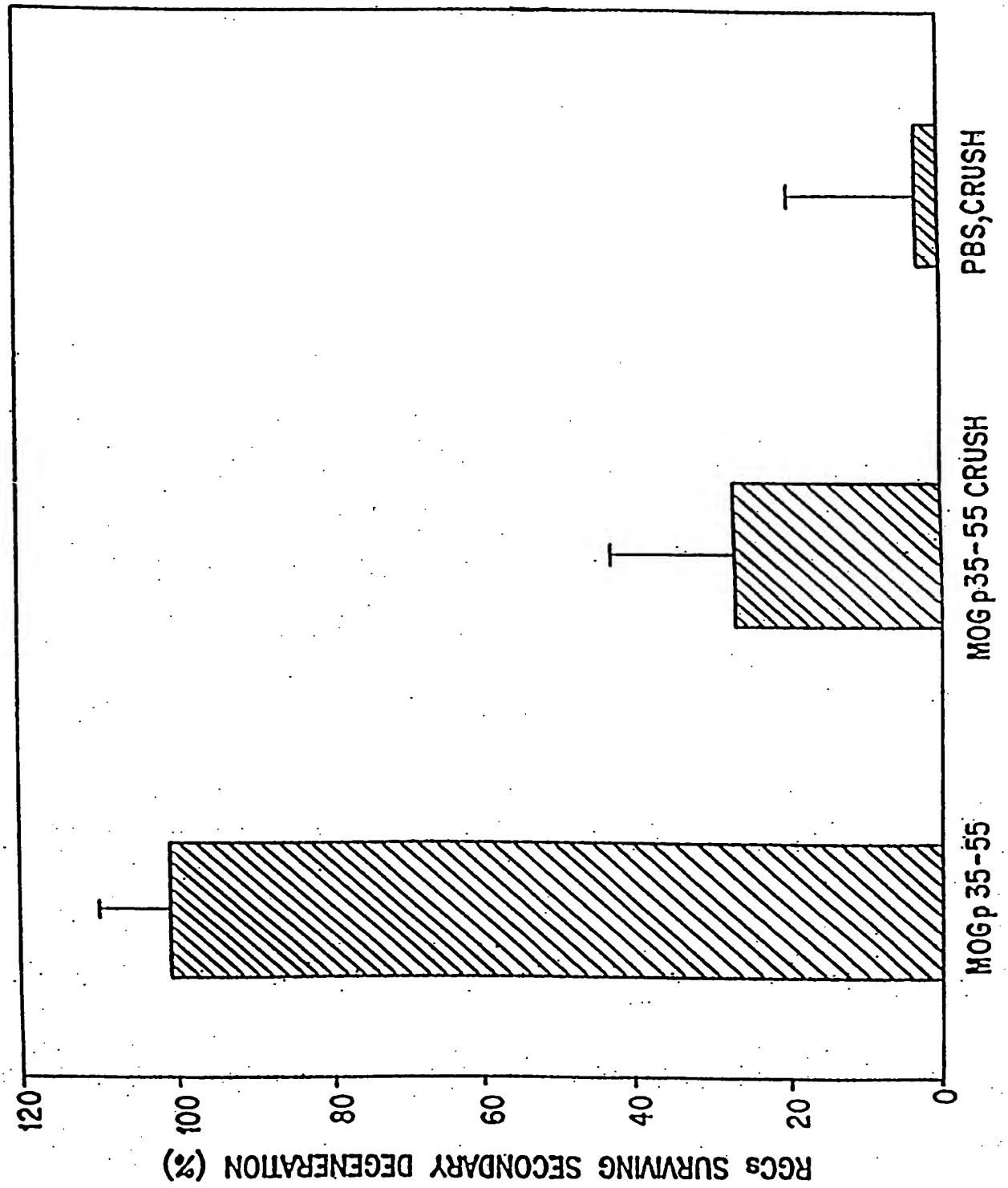
RGCs SURVIVING SECONDARY DEGENERATION (%)
120
100
80
60
40
20
0
MOG p35-55
MOG p35-55 CRUSH
PBS,CRUSH

FIG. 7

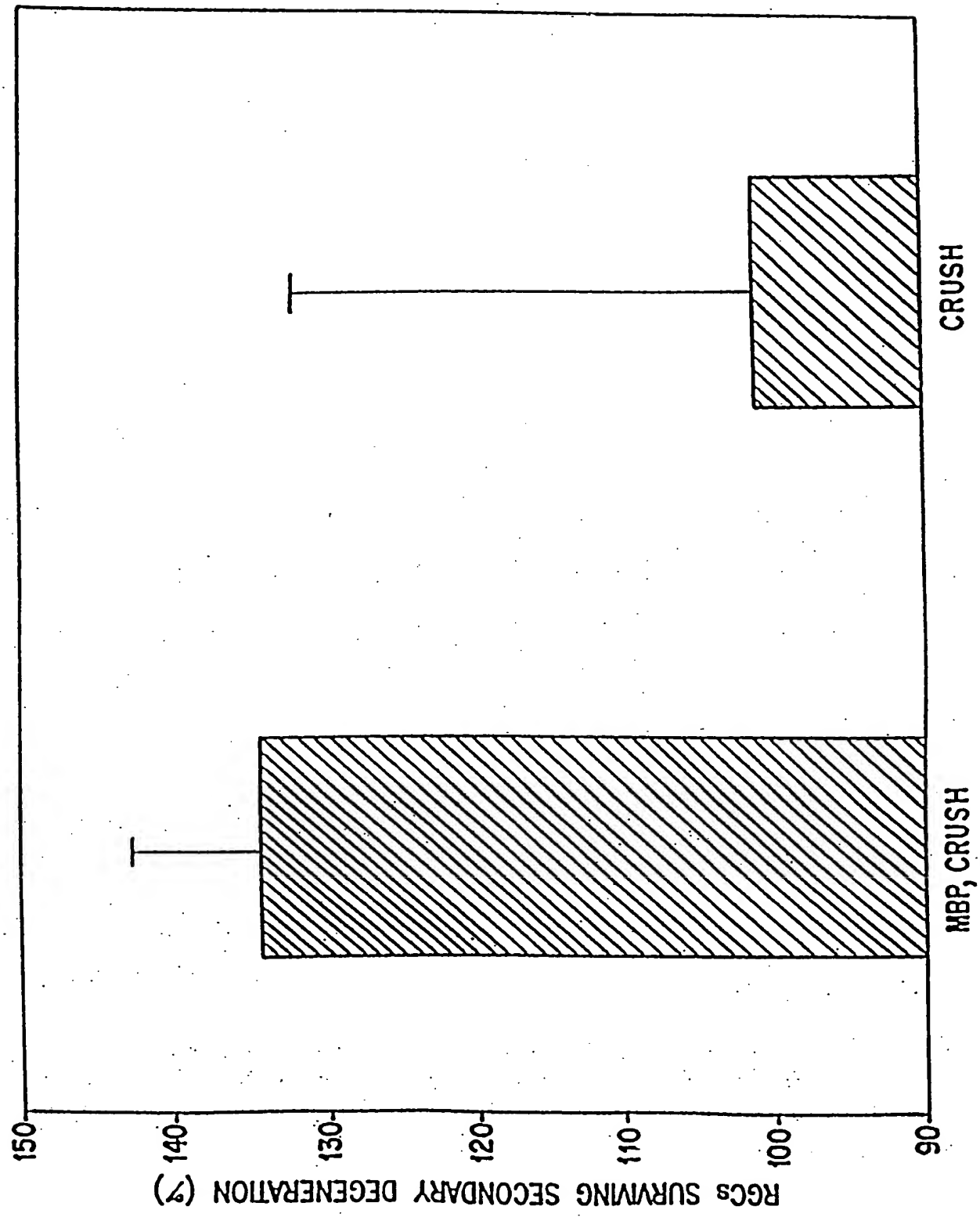
RGCs SURVIVING SECONDARY DEGENERATION (%)
150
140
130
120
110
100
90
MBP, CRUSH
CRUSH

FIG. 8

```
  1 ccaagaagat cccacagcag cttccgaagg cctggatgtg atggcatcac agaagagacc
 61 ctcacagcga cacggatcca agtacttggc cacagcaagt accatggacc atgcccggca
121 tggcttcctc ccaaggcaca gagacacggg catccttgac tccatcgggc gcttctttag
181 cggtgacagg ggtgcgccca agcggggctc tggcaaggac tcacacacaa gaactaccca
241 ctacggctcc ctgccccaga agtcgcagag gacccaagat gaaaacccag tagtccactt
301 cttcaagaac attgtgacac ctcgtacacc ccctccatcc caaggaaagg ggagaggcct
361 gtccctcagc agatttagct ggggaggaag agacagccgc tctggatctc ccatggcaag
421 acgctgagag cctccctgct cagccttccc gaatcctgcc ctcggcttct taatataact
481 gccttaaacg tttaattcta cttgcaccaa atagctagtt agagcagacc ctctcttaat
541 cccgtggggc tgtgaacgcg gcgggccagc ccacggcacc ctgactggct aaaactgttt
601 gtccctttt at
```

FIG. 9

```
   1 gaaaacagtg cagccacctc cgagagcctg gatgtgatgg cgtcacagaa gagaccctcc
  61 cagaggcacg gatccaagta cctggccaca gcaagtacca tggaccatgc caggcatggc
 121 ttcctcccaa ggcacagaga cacgggcatc cttgactcca tcgggcgctt ctttggcggt
 181 gacaggggtg cgccaaagcg gggctctggc aaggactcac accacccggc aagaactgct
 241 cactatggct ccctgcccca gaagtcacac ggccggaccc aagatgaaaa ccccgtagtc
 301 cacttcttca agaacattgt gacgcctcgc acaccacccc cgtcgcaggg aaaggggaga
 361 ggactgtccc tgagcagatt tagctggggg gccgaaggcc agagaccagg atttggctac
 421 ggaggcagag cgtccgacta taaatcggct cacaagggat tcaagggagt cgatgcccag
 481 ggcacgcttt ccaaaatttt taagctggga ggaagagata gtcgctctgg atcacccatg
 541 gctagacgct gaaaacccac ctggttccgg aatcctgtcc tcagcttctt aatataactg
 601 ccttaaaact ttaatcccac ttgcccctgt tacctaatta gagcagatga cccctcccct
 661 aatgcctgcg gagttgtgca cgtagtaggg tcaggccacg gcagcctacc ggcaatttcc
 721 ggccaacagt taaatgagaa catgaaaaca gaaaacggtt aaaactgtcc ctttctgtgt
 781 gaagatcacg ttccttcccc cgcaatgtgc ccccagacgc acgtgggtct tcaggggcc
 841 aggtgcacag acgtccctcc acgttcaccc ctccaccctt ggactttctt ttcgccgtgg
 901 ctcggcaccc ttgcgctttt gctggtcact gccatggagg cacacagctg cagagacaga
 961 gaggacgtgg gcggcagaga ggactgttga catccaagct tcctttgttt ttttttcctg
1021 tccttctctc acctcctaaa gtagacttca tttttcctaa caggattaga cagtcaagga
1081 gtggcttact acatgtggga gctttttggt atgtgacatg cgggctgggc agctgttaga
1141 gtccaacgtg gggcagcaga gagaggggcc cacctcccca ggccgtggct gcccacacac
1201 cccaattagc tgaattcgcg tgtggcagag ggaggaaaag gaggcaaacg tgggctgggc
1261 aatggcctca cataggaaac agggtcttcc tggagatttg gtgatggaga tgtcaagcag
1321 gtggcctctg gacgtcaccg ttgccctgca tggtggcccc agagcagcct ctatgaacaa
1381 cctcgtttcc aaaccacagc ccacagccgg agagtccagg aagacttgcg cactcagagc
1441 agaagggtag gagtcctcta gacagcctcg cagccgcgcc agtcgcccat agacactggc
1501 tgtgaccggg cgtgctggca gcggcagtgc acagtggcca gcactaaccc tccctgagaa
1561 gataaccggc tcattcactt cctcccagaa gacgcgtggt agcgagtagg cacaggcgtg
1621 cacctgctcc cgaattactc accgagacac acgggctgag cagacggccc ctgtgatgga
1681 gacaaagagc tcttctgacc atatccttct taacacccgc tggcatctcc tttcgcgcct
1741 ccctccctaa cctactgacc caccttttga ttttagcgca cctgtgattg ataggccttc
1801 caaagagtcc cacgctggca tcaccctccc cgaggacgga gatgaggagt agtcagcgtg
1861 atgccaaaac gcgtcttctt aatccaattc taattctgaa tgtttcgtgt gggcttaata
1921 ccatgtctat taatatatag cctcgatgat gagagagtta caaagaacaa aactccagac
1981 acaaacctcc aaatttttca gcagaagcac tctgcgtcgc tgagctgagg tcggctctgc
2041 gatccatacg tggccgcacc cacacagcac gtgctgtgac gatggctgaa cggaaagtgt
2101 acactgttcc tgaatattga aataaaacaa taaactttt
```

FIG. 10

A.

```
   1 taatatctag ggktttgact ctgacccgtg ttggggctct cacttcatgg cttctcacgc
  61 ttgtgctgca tatcccacac caattagacc caaggatcag ttggaagttt ccaggacatc
 121 ttcattttat ttccaccctc aatccacatt tccagatgtc tctgcagcaa agcgaaattc
 181 caggcaagcc ttagggaaaa aaggaaaaac aaagaaaatg aaacaattgg cagtgaaagg
 241 cagaaagaga agatggagcc cttagagaag ggagtatccc tgagtaggtg gggaaaaggg
 301 gaggagaagg ggaggaggag aggaggagga aagcaggcct gtccctttaa gggggttggc
 361 tgtcaatcag aaagcccttt tcattgcagg agaagaggac aaagatactc agagagaaaa
 421 agtaaaagac cgaagaagga ggctggagag accaggatcc ttccagctga acaaagtcag
 481 ccacaaagca gactagccag ccggctacaa ttggagtcag agtcccaaag acatgggtaa
 541 gtttcaaaaa ctttagcatt gaagattcaa gaggacacag g
```

B.

```
   1 ctgctttcag agcctgtgac ttcttgtgtg cctctcctgt ttctcagcaa catggcatag
  61 ggcctgggat accaggtctg gggatctcag ggactcttag cactttaaga cacatgtgtt
 121 cccaggccct ggtgtgttcc tctagtgcca gaaagatgtt tcatgctttg ctgactttgt
 181 ataaagtctg tttgtagctg ttttgacaga atctcagcgt ataactgagg gtggggacat
 241 tagccaagct gcattatagg aggacaaaac tgccatacaa agtgtccaaa atcattaagc
 301 ctgcattttt attattggga gtaatatcaa acctcctatt ttccaatttt catttcttgt
 361 cctgtgctag ctccatcctg tttggactgc tcctcccata tgtaaactaa gaagaatcaa
 421 gcattctttg caacaaatac acacgatgct caaaaatgtc caggagcatc caatttccaa
 481 agtttcctcc acctggaatg ctcttcatgc taaaatcctg tctgacaata ccagcatctc
 541 tggcctgcac tcatcccttc ctggaactcc aagtgcattt accctctgtt accacttact
 601 tggctgcctg aattgttagt tgaaaatatt aggtctactt agctaattct tcctcaggaa
 661 attaaagact cccatatggc agagtctgtg tcttttctct cttcatatcc cgtataacac
 721 ccagcataat gctgggcata tagtgagtat tccataaata gttgatgaat gactaaaata
 781 agcaagcaaa caaacagact agaacaataa gaaagaaggg actggatttc ataatctctc
 841 tggcttgcta tttgaattgc tgaattatta ttatttatta aatatttttt aaattctggc
 901 aataaaaggt aaggatttat tttctttctt tctttttttt tttcttgaga cagagtctcg
 961 ctcttactgc ccaggctgga gtacaatggc gcaatcttgg ctcacggcaa cctccgcctc
1021 ctcctgggtt taacagattc tcctgtctca gcctcctgag tagctgggat tacaggcata
1081 cgcccatgcc cggctaattt ttgtattttt agtagagacg gggttttgcc atgttggcca
1141 ggctggtctt gaactcctga cctcatgtga tccacctgcc tcagcctccc aaagtgctgg
1201 gattacaggc atgcgccacc gtgcccggcc aaagatttat tttcaagaat gaaacaaagt
1261 aaggattctg ggtcaatctc acatgctgaa agccaaaacc tctagccgct cctgcttttt
1321 gacttcggag tgcccactat ctccgagcct gtgagcacag ggcctggcag aggggtttga
1381 gtggcatgag ctacctactg gatgtgcctg actgtttccc cttcttcttc cccaggcttg
1441 ttagagtgct gtgcaagatg tctggtaggg gccccctttg cttccctggt ggccactgga
1501 ttgtgtttct ttggggtggc actgttctgt ggctgtggac atgaagccct cactggcaca
1561 gaaaagctaa ttgagaccta tttctccaaa aactaccaag actatgagta tctcatcaat
1621 gtgtaagtac ctgccctccc acacagaccc atctttttct tccctctctc catcctggag
1681 atagagaact cttcagtacc ttagtaacta gcaggggact ggggtggagc cagaccggat
1741 tcccgagtct tccctctgtg ca
```

FIGS. 11A-B

C.

```
   1 ctagaaaatc cctagccttg ttaaggtgct cgctctggtg tatacctcac ttatgtcggg
  61 aaagaagcca ggtcttcaat taataagatt ccctggtctc gtttgtctac ctgttaatgc
 121 aggatccatg ccttccagta tgtcatctat ggaactgcct ctttcttctt cctttatggg
 181 gccctcctgc tggctgaggg cttctacacc accggcgcag tcaggcagat ctttggcgac
 241 tacaagacca ccatctgcgg caagggcctg agcgcaacgg taacaggggg ccagaagggg
 301 aggggttcca gaggccaaca tcaagctcat tctttggagc gggtgtgtca ttgtttggga
 361 aaatggctag gacatcccga caaggtgatc atcctcagga ttttgtggca ataacaaggg
 421 gtgggggaaa attgggcgcg agtctgtggc ctcgtcccca cccaaggctg ggtcctctct
 481 aggggcctgg catttgagtg aggaagcgat ggctgcagcc gaacgagaag gtcaggaaga
 541 acgtggtgcc cagctggctt agcctcacct ttcaaaggtt ccctaagcaa atttcttctc
 601 aaaacagaaa gcatgagttt tgtgggatgc tttgtacaat cagaccattt ctaagccatc
 661 tgttggtatc cctttgttcc cttcctagta ggtaccacaa gagtggatct aactggacaa
 721 gagtctaaaa tgctgctcat gtgattgaga cttgggcacc tgagctraga gggaggatgg
 781 ataataaaaa ttaaataata actccaaggt aaatttacaa tgttctgg
```

D.

```
   1 gatcctcctc attcttcccc tacccattcc ccccaccctc cgttatactg gggccagtta
  61 tctagtagat actgccaatt acccttggca gaggtgccct gctcactaat tttatttggg
 121 ggagmgccct ggaacctggt tttaatgtct ggcacacgcc acttccagga tctcccagtt
 181 tgtgtttcta catctgcagg ctgatgctga tttctaacca acccatgtca atcattttag
 241 tttgtgggca tcacctatgc cctgaccgtt gtgtggctcc tggtgtttgc ctgctctgct
 301 gtgcctgtgt acatttactt caacacctgg accacctgcc agtctattgc cttccccagc
 361 aagacctctg ccagtatagg cagtctctgt gctgatgcca gaatgtatgg tgagttaggg
 421 tacgggtgct ttggctctcc tacccactat ggaagcacta tatatttggt tattttctta
 481 gtgtaaggag ggtggtgatt atgagaaaaa tataagatga tgaatgattg ggtcttagtt
 541 tattaatcct tccctactga aaccagagag gtttcttccc ccggaaggga acttggaagt
 601 ggtgggagtt ttcttggcca ttcacattgg cctactctag ttgactgctg ttcacaaccc
 661 caaagcagca catttcaata acaaacacaa ggttdsacca ctgttcaata ccaccttctc
 721 ttttttgtaa acctgtagaa aagaggatcc taattgttgg tagmatccaa mtttacagcc
 781 aggataatta gagatggaag aagggctctg ggggaaagtc tccatgtggc cccgtaactc
 841 cataaagctt accctgcttg ctttttgtgt cttacttagg tgttctccca tggaatgctt
 901 tccctggcaa ggtttgtggc tccaaccttc tgtccatctg caaaacagct gaggtgagtg
 961 ggttatttgg gttattttac aagggagtag ctaataccat acaaattaca cccatggcct
1021 tcaattttaa ggactgaaag tttccctttg ctggattttg aattagccga ttgccttcta
1081 caacatgttg gctaagtgtg cctgagccaa tgagcataga aggtaaaaca cctcttttct
```

E.

```
   1 aattagcaca cagaaaggat atccaacaca tacaaagctg tnntcatgga ctacactgga
  61 gcatattact gctgttgcaa gaaacatttc ttcttcctct tttcattttc ctgcagttcc
 121 aaatgacctt ccacctgttt attgctgcat ttgtgggggc tgcagctaca ctggtttccc
 181 tggtgagttg actttgaatg atcttggcaa gtaaataggc ctgagatagt tgtgggtaca
 241 gctattctga aaggcaagaa ggtagactgc ttccatcctt gaaatgctgg aggga
```

FIGS. 11C-E

F.

```
   1 aattctatat actatcacta tggctccact ttggatactc tccagtggat ttagttactc
  61 atatggaaat acctgggagg acctcctaac attattagaa ttgttatgat tataatacaa
 121 ygctatgtcc caggtcttgc tgatagtgct acagtgccct gtgaatgtag tgtgctcatt
 181 gtgcagatta aaaacctaag gcactgaagg gtgaagtgat ttatctgaag ttattttata
 241 aagcagtgat cagacaasct gagctcacag aactccctgg cccctactgc tgaggtttcc
 301 atacagagtc aagtaatttc tcaccttgta aaacgaattg attcattaac caggggagag
 361 ctctactgca tgatgtggct gtgtgtctac agcaagcacc ctatgactct aagtcactcg
 421 gacatattga tgtggcaaag cccaaatatt gttcacttcc ctgaggaaaa ctcagtgcta
 481 gatcaaacag aggtgtggaa taaatcttta tgatttgatt ctctgggcct gggccatgag
 541 acccatgatg cctcagagac atcggacttc cagtcaagtg tatatggaga aagccaagcc
 601 tgggatgtac tgctttttgc agagcatggg tttttccctt atttagttat gattttattt
 661 ctacccttcc tcattcccaa agggatttga ggagggagtg ctttcttttc tactctcatt
 721 cacattctct cttctgttcc ctacagctca ccttcatgat tgctgccact tacaactttg
 781 ccgtccttaa actcatgggc cgaggcacca agttctgatc ccccgtagaa atcccccttt
 841 ctctaatagc gaggctctaa ccacacagcc tacaatgctg cgtctcccat cttaactctt
 901 tgcctttgcc accaactggc cctcttctta cttgatgagt gtaacaagaa aggagagtct
 961 tgcagtgatt aaggtctctc tttggactct cccctcttat gtacctcttt tagtcatttt
1021 gcttcatagc tggttcctgc tagaaatggg aaatgcctaa taatatgact tcccaactgc
1081 aagtcacaaa ggaatggagg ctctaattga attttcaagc atctcctgag gatcagaaag
1141 taatttcttc tcaaagggta cttccactga tggaaacaaa gtggaaggaa agatgctcag
1201 gtacagagaa ggaatgtctt tggtcctctt gccatctata ggggccaaat atattctctt
1261 tggtgtacaa aatggaattc attctgcgtc tctctattac actgaagata gaagaaaaaa
1321 gaatgtcaga aaaacaataa gagcgtttgc ccaaatctgc ctattgcagc tgggagaagg
1381 gggtcaaagc aaggatcttt cacccacaga aagagagcac tgaccccgat ggcgatggac
1441 tactgaagcc ctaactcagc caaccttact tacagcataa gggagcgtag aatctgtgta
1501 gacgaagggg gcatctggcc ttacacctcg ttagggaaga gaaacagggt cttgtcagca
1561 tcttctcact cccttctcct tgataacagc taccatgaca accctgtggt ttccaaggag
1621 ctgagaatag aaggaaacta gcttacatga gaacagactg gcctgaggag cagcagttgc
1681 tggtggctaa tggtgtaacc tgagatggcc ctctggtaga cacaggatag ataactcttt
1741 ggatagcatg tctttttttc tgttaattag ttgtgtactc tggcctctgt catatcttca
1801 caatggtgct catttcatgg ggtattatcc attcagtcat cgtaggtgat ttgaaggtct
1861 tgatttgttt tagaatgatg cacatttcat gtattccagt ttgtttatta cttatttggg
1921 gttgcatcag aaatgtctgg agaataattc tttgattatg actgtttttt aaactaggaa
1981 aattggacat taagcatcac aaatgatatt aaaaattggc tagttgaatc tattgggatt
2041 ttctacaagt attctgcctt tgcagaaaca gatttggtga atttgaatct caatttgagt
2101 aatctgatcg ttctttctag ctaatggaaa atgattttac ttagcaatgt tatcttggtg
2161 tgttaagagt taggtttaac ataaaggtta ttttctcctg atatagatca cataacagaa
2221 tgcaccagtc atcagctatt cagttggtaa gcttccagtc atcagctatt cagttggtaa
2281 gcttcccagg aaaaaggaca ggcagaaaga gtttgagacc tgaatagctc ccagatttca
2341 gtcttttaat gtttttgtta actttgggtt aaaaaaaaaa aaagtctgat tggttttaat
2401 tgaaggaaag atttgtacta cagttctttt gttgtaaaga gttgtgttgt tcttttcccc
2461 caaagtggtt tcagcaatat ttaaggagat gtaagagctt tacaaaaaga cacttgatac
2521 ttgttttcaa accagtatac aagataagct tccaggctgc atagaaggag gagagggaaa
2581 atgttttgta agaaaccaat caagataaag gacagtgaag taatccgtac cttgtgtttt
2641 gttttgattt aataacataa caaataacca acccttccct gaaaacctca catgcataca
2701 tacacatata tacacacaca aagagagtta atcaactgaa agtgttcctt catttctgat
2761 atagaattgc aattttaaca cacataaagg ataaactttt agaaacttat cttacaaagt
2821 gtattttata aaattaaaga aaataaaatt aagaatgttc tcaatcaaac atcgtgtcct
2881 ttgagtgaat tgttctattt gacttcacaa tagaaactta ataatcgtac cttctcaaga
```

FIG. 11F

```
   1 atggaaatgt tctgtatttg tgttgtctga tgagataacc actaactgta gtgctattga
  61 gcatttgaaa catggctagt gtaatcaatg aaccaaattt ttaattttat ttaattgtaa
 121 ttaattttaa gtggccacat gcagggagtg actgctgcat tggacagcac ggctctaaat
 181 tgagcctttt ttccttattt ggtgaggcat acttgcctta agattgggaa gtctattttt
 241 ggaacctgct accaatgctg gtctcacact tgcaattctc agctgagcca agaggtgaga
 301 gaaaggtcat tttccattcc aagatctcac tctcccctgt gacactgagg aaactggcaa
 361 gtgatgtgaa ggctggagag cgtgtcctgt atgctggctc tgtcccttct gcctgtgttg
 421 actgacatag ttagttgctg cccttgctgg tctcccttcc tccaaccttg cctctctgag
 481 cacacctgac attcatctca tgacttccct aaaaacattc tttgggaaca agaaactaac
 541 aaatcccaag tgacctatca catatacaaa catacagggc agagtttgga ttcgcggtag
 601 aagaaaggga ggttagacat taagaagaat ggtctggtga tgacagttgt gagataatag
 661 aaacaggaaa aagaaatcta agttttcttt ctttttttaa gaaccaataa taatttctct
 721 cttttgacta gtcagtaggg ctggggtgga ttggaggaag cttacatatt ccatgaacaa
 781 gcctcttcct aaggtcctgt aagtgatcct gccccactga ttagccccta gaagaccctt
 841 caaaggttgg atctccagga gggagtgggg gaggaaagcc ctgtaccagg cagcctctgc
 901 tccattgctc tgggggggtg gggaagacaa accctggtca tcccctcagt ctgtagccct
 961 tttgtgtgag tgcctggcaa gggtgacgtg gggctgtttc tgcgggcaca gctgcagcaa
1021 ttaccggagt ggaggcaggg cccaggcagc actgccctcc aagatcttcc cttgggcttt
1081 tcagcagtaa ggggacatgc accccaaggg cctccacttg gcctgacctt gctgcggggg
1141 ctctctgtcc ccaggaacag tagagatggc aagcttatcg agaccctctc tgcccagctg
1201 cctctgctcc ttcctcctcc tcctcctcct ccaagtgtct tccagctatg caggtaagac
1261 atgtttttt tcctgccctg gggagaccct gaaaacagaa aggctagttt cctgggggtt
1321 agctccttca aacatcctca agttggtata ttatctttct aaaacataga cctactgaca
1381 tgcctccctt cctcagaaac cttccgtggg tggttcttac agccttcaag atggagtcca
1441 gactcttttt ttttttgggg acagagtctc cctctgttgc tcaggctgga gtgcagtggc
1501 atgatctcgg ctcactgcaa cctcagcctc cctggttcaa gcgattctcc tgacttggcc
1561 tcccaagtag cggagactac aggcgcctgc caccacaccc agctaaattt gttcttttct
1621 ttctttttt ttttttttgg gattttagga cagacggggt ttcacatgtt ggccaggatg
1681 gtctcgatct cttgacctgc tgatccgccc gcctcagctt cccaaagtac tgggattatg
1741 ggcgtgagcc actgcactag gcctaatttt tttatttta gtagagatgg ggtttcacca
1801 tgttggccag gctggtctgg aacccctgac ctcaagtggt ctgccctcct cagcctccca
1861 aagttctgag attacaggca tgagccattg cgtctgaccc agactcctta atgtgactaa
1921 ctccaggctt tccttggact acttcttact tgtctttcca gctttgtctt ttcacctctc
1981 caattgagat aaaataataa caacctcttg gagttctcat caggattaca tgaaatgaga
2041 tatgtaacat gcttagcagt gcctgtccat agtaaatctc aataaatgtt tgtggaatta
2101 taatatcttg tcatgtttga gactttgctc tgcataatca ggcaccagta ggtttttata
2161 aaggaacccg tctgtcacgt gcagaggaga aataaacaga aagtttccca tcctcaggga
2221 gccacctgac tgacagaggc acagtgcatc cactctccag gtctagggga gaaagcagcc
2281 ttatttctta gtagctcaga atctgacttg agaaacacat ccacatagaa aaaaacaagg
2341 aacttttcg ggtcagggtc cgggacccac agtgaggtgg aagatacagg ggaaggaaga
2401 gggaaataga gccatcccca gggtggaaga tctcagaaga gaatttggga aacaaggtat
2461 gaacaaggac tgaatagtga gaagtgatgg agagacagct aaagtagatg gagtgtcaaa
2521 accaaaacct ctaagggtag aataggcagc aatttggcca agtcctaaca gggaggccca
2581 taggaggatt caacctcaag atgctgtgcc acattccaag agggaaccta aaggctgggc
2641 tgaagagtca gagatggcta cagctggcaa aaagatgggc agatgctgag aggagatgat
2701 tgctaaaatg ttctgtccag gacattcaca gtatctctat aaccagagtc ttttttgtcg
2761 ttgttgttct caagaaggaa acttgaggcc gggtgtggtg gtttatgccc ataatcccag
2821 cgctttgggg ccaaggcagg cggatcacct gaggtcagga gttcgagacc agcctggcca
2881 acagtgtgaa acctcatctt tactaaaaat acaaaaatta gctggatgcg gcggtaggtg
2941 cctgtaatgc cagctactcg ggaggctgag gcaggagaat cacttgaacc tgggaggcgg
3001 aggttgcagg gaggcggagg ttgcagtgag ccaagattgc accactgcac tccagcctgg
```

FIG. 12

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3061 gcgacagaga gtaagactgt ctcaaaaaat aaatgaataa ataaaaagga agaagaagaa
3121 gaagaacaat tgcaatcctc cctggctcta gaatgtcatt taaaagtcga gtgtcttctt
3181 ccttccctgt tttgaagcag cccttctcat gacaggcttg cttgccaagg ttccctctga
3241 ccttaaatct cttccttttg gtgtcttgga cagggcagtt cagagtgata ggaccaagac
3301 accctatccg ggctctggtc ggggatgaag tggaattgcc atgtcgcata tctcctggga
3361 agaacgctac aggcatggag gtggggtggt accgcccccc cttctctagg gtggttcatc
3421 tctacagaaa tggcaaggac caagatggag accaggcacc tgaatatcgg ggccggacag
3481 agctgctgaa agatgctatt ggtgagggaa aggtgactct caggatccgg aatgtaaggt
3541 tctcagatga aggaggtttc acctgcttct tccgagatca ttcttaccaa gaggaggcag
3601 caatggaatt gaaagtagaa ggtgagtagt gccatataat attaggtatt aactgttggg
3661 tggccaagaa caattattct ctcaactgag atgagatccc tcaacccaaa catctcagtc
3721 ctgggaatga tttccataaa aatgtacaca tcaataaaca gaaactcatg cttagggatg
3781 tctgttgcat cattattcag agtagcaagg aaattgggat caaaatcaat gcctttgagt
3841 aggtaagtga cagaatgaac aatggtagcc atactgtgaa tattatgcag ggattaaaaa
3901 gattatttta gcactaggcc agatggtttg gggggctcct ctaaggtatt attgagtgat
3961 aagagcaagc tgctgtagga tacaaaaaca aaaacaaaac cctagggcat ggtggtttgc
4021 ctcgcagcta ctcaggaggc tgagacggga ggctggcttg agcccagggg tttgcagtta
4081 cagtgagcta tgattgcacc actgcactcc aacccgggtg acagagcaaa gaccttcacc
4141 cccactccct acccgtctct aaaaaaaaca aaaacaaaaa caaaaaaacc cttgggccca
4201 gcgccgtggc tcacgcctgt aatcccagca ctgtgggagg ccgaggtggg cagatcacaa
4261 ggtcaggaga tcgagaccat cctggctaaa acggtgaaac cccgtctcta ctaaaaatac
4321 aaaaaaaaaa aaaaaattta gccaggcatg gtagcaggcg cctgtagtcc cagctactcg
4381 ggaggctgag gcaggagaat ggcgtgaacc cggaagcgga ggttgcagtg agccaaaatc
4441 cttccactgc actccagcat gggggacaca gcgagactcc gtctcaaaaa aaaaaaaaaa
4501 accctgtatt tgtgagcgca cacacacaca cacacacaca cacacctgtg cttggtccta
4561 gtgaataagc aagtaaatca aatgtctaaa tataattata gaaaggagat gtcacctttt
4621 ggctgtacct ccactatttc attctgcaga attgcagaat ttctttttt tttcctttct
4681 ttcttttctt ttttttttg acacagagtc tcgctctgta acccaggctg gagtgcaatg
4741 gcgccctccg cctcctgggt tcaagtgatt ctcctgcctc agcctcccga gtagctggga
4801 ttacaggtgc ccaccaccac acccagctaa tttttgtatt tttagtagag acagggtttc
4861 accaggttgt caaggttggt ctcaaactcc tgacctcagg tgatccactc gcctcagact
4921 cccaaagtgc tgggattaca ggcatgagcc atggtgcccg gcctcagaat ttcattttca
4981 acatgttttg catgatgggt gattttggag aatatttttt gctctatcgc aggatgatta
5041 agatgtggac aaggtgaagc cgatggaggg ggagctttga aagttacttg ctatttaatt
5101 gaggaactaa actgctttga gagcctgggg gtcagatcct ctgccttttc ctcctcccca
5161 cctgcagtgc aaacatcaga caattgatca ctattgtatc ttggaggtgg gagtgaccat
5221 tgcagtgctg ggaccagaag atggcattgt atgtggaaca acaaagcact atttctagag
5281 actgcctgca gggatatgga aatagcttta tgtgtctcag aatgttcttc atacagctgt
5341 ttttattggg gaaattctac ttgccgaaaa gtttgatagt gagaccctct ccagtttgca
5401 gatttttctc cttcctgctc aacaacttcc tagctcagta actgcctctc ccaacaaact
5461 ccctcagttt caccacacca aaaaaggaag acaagccggt tgcggtggct cacacctata
5521 atcccaaaac tttgggaggc cgaggcgggt ggatccacct gaggtcggga gttcgagact
5581 agcctgacca acatggagaa accctgtctc tactaaaaac acaaaattag cctggcgtgg
5641 tggcgcattc ctgtaatccc agctgggagg ctgaggcagg agaatcgctt gaaccccgga
5701 ggcggaggtt gcagtgagcc aagatcgttc cattacactc cagtctgggc aagaaaagtg
5761 gaactccatc tccaaaaaaa aaaaaaaaaa aacaaggaag acaaaaagaa aagcagctaa
5821 agactttgcc tcaggggaga aagttctctt ttgggttgct atccacattc caacctcctg
5881 ttcccacctc ttcgtctgca tgcctaagaa actgttttac aagtaaataa gggacgcttt
5941 gtctaggctt tggagccagg aagttgagac aaatttagga atgagatgaa gtaatggtat
6001 tattgcaagt ctcaggtgta actacctctg ctctttctct gaagagtttc taatttctct
6061 tgtttactta ttttttttctt gtcatttttg ggattttatt actagttgtc tctaatcctt
```

FIG. 12 (cont.)

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6121 tctttaaatt cttcattatg aaacataaaa acaaatgcca ggcgcggcag ctcacgcctg
6181 taatcccagc actttgggag gccgaagcgg gcagatcacc cgggtcagga gttcgagacc
6241 agcctgatca acatggagaa accccgtctc tactaaaaaa tacaaaatta gctaggcgtg
6301 gtggcacatg ccagtaatcc cagctacttg agagactgag gcaggagaat cgcttgaacc
6361 gggaggcaga ggttgcggtg agccaagatc gcgccattgc actccagcct gggcaacaag
6421 agcaaaactc tgtctcaaaa aaaaaaaacc acatacaaac cagagataat attataatga
6481 gcctccaagt gcctaccacc ttgctgcagc acttgtcaat ccagggacca cccacctcac
6541 cggctcccca ctcattacca ccctccccta ctcaattact gaggtaaatc ctaggcagca
6601 tgatcatttc ttttttttct ttttatttat tttgagacag gatctgtctc tgtcacccag
6661 gctggagtgt agtggcatat ctctgctcac tgcagcctct gcctcccggg cagaagccat
6721 cctcccacct cagcctacat agtagctggg accacaggca cacaccacca cacactgcta
6781 atgttttgta ttttttgtag agactgggtt ttaccatgtt gatcaggctg gtctcaaact
6841 cctaggctca agcaatcctc ccacctcggc ctcccaaagt gctagaatta caggcgcgag
6901 ccactgcacc cagcgaagaa cacttttaa aaaataaata ggccgggcgc ggtggctcac
6961 acctgtaatc ccagtacttt gggagcccaa ggagggcgaa tcatgaggtc aagagattga
7021 gaccatccta agtaacatgg tgaaacccca tttctactac aaatacaaaa acaaaattag
7081 cctggcgtgg tggcaggcgc ctgtagtccc agctacttgg gagctgaggc aggagaatgg
7141 agtgaacccg ggaggcggag cttgcagtga gctgagatca tgccactgca ctcccccctg
7201 gggcaacaga gtgagactcc caaaaaaaaa aaaaaaagcc ccccctcccc acacacaata
7261 atataaataa ataaataacc acaatactat tatcacatct tacaaactca acaaaaattt
7321 cttaatatca tcaaataccc agtttgtgtt caaattttcc tgattgtttc ataaatatac
7381 tcttacagtt ggtttctttt agcgagattc aaatgagacc cacctgttga cctttgccct
7441 tagggtttcc cagggtctga attttgttga cgacattccc atgttgctat gtaatacggt
7501 cctccatgcc ctgtgttttt ctgtaaactg atagatgtgg aggtgcaatg acatttgtgt
7561 ttgatttact ttggcaaata tagttcatca gtgatactct atacttcttg ttgctttaca
7621 tccggaggct gataatgtct gcttttctct cttttctaat tatttgtgaa aggaaaaatg
7681 tgggggggttg ggagaaaaaa acccttaagt acatactcgc taaatcacat tgctacaggt
7741 aacttccatt aagaacttga aagtaaaggt agctgcattt tcccctaggg aacacaatga
7801 tagacaggag ccttagtcta cagcttgaag gattgtaatt atacctaagc aaccctcctg
7861 gaccagttta atgttattag ctgtgatgta tccctacctt tgatgtcatt atccttactt
7921 agctccctta aagcagagat caagatgaaa agggcttcag ctgcagcatg gcacatggag
7981 attagagtgg ggcttttgga tgctgaggag cagacctaga atgggaaata gatgggagcc
8041 acagaagtga aggtcccccc ccctcattgc tcaacctact ccacatctcc aggtctgcac
8101 atctgttcag ttactgaatc ctgtgtaagc taccttcttt ttctttttc ttttatttat
8161 ttatttattt ttttttgag atggagtttt gctcttgtta cccaggctgg agtgcaatgg
8221 tgcaatctcg gctcactgca ccctccaact cccaggttca tgcaattctc ctccctcagc
8281 cttccaagta gctgggatta caggctgcac caccatgtct ggctaatttt tgaaaaatca
8341 gtagagagag ggtttcacca tgttggccaa gccggtctcg aactcctgac ctcaagtgat
8401 ccacccacct tggcctccca aaatgctggg attacaggtg tgagccacca tgcccgctgt
8461 aaactacctt cttaaaagct ctagaagagg gcttttaacc ttttgttgtg tgtcatgcac
8521 cttccgcaag ctgatgaagt tgatagaccc atctcagaat tttttttttt tttttgagac
8581 agtgtctcac tctgtcaccc aggattggtt gcagtggcac gatcatgggt cattgcagcc
8641 tccacctccc aggctcaagt gatcctcctg actcagcctc ttgaatagct gagaccacag
8701 gcttgtgtca ccatgcccag gtaatttta attttttttc gtagaggcag ggtctcacat
8761 tatgttgccc agtctggcct cgagaactcc tgggctcaag caatcttcct gccttgggct
8821 cccaaagtgg tgggattaca ggggagagcc accacaccta gccaggagga tgttttaaat
8881 acaccaaata aaacatttat acccaaatac agttatccaa atattaaatt aacaagagtt
8941 agggtgaccc tattaattag tgtaatttcc aaatagtaat gaacataagt gatagtttga
9001 gatttctgtg acttttctaa tgtgacgtga aaatatttgt gatttttctt tttctttttt
9061 ttttttgaga tggagtttcg ctcttgttgc ccaggctgga gtgcaatggc aagatctcgg
9121 ctcacctcaa cctccgcctc ctgggttcaa gcgattctcc tgcctcagcc tcttgagtag
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FIG. 12 (cont.)

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 9181 ctgggattac aggactgtgc caccacgtcc agctaatttt gtatttttag tagaaacagg
 9241 gtttctccat gttggtcagg ctggtcttga actcccaacc tcaggcgatc cgcccgcctc
 9301 ggcctcccaa agtgctggga ttacaggtgt gagccaccgc acctggccaa tatttgtgat
 9361 ttttattgac gacaaagtca aaggttctct tcatattatt gtggtgtatc gcctacaagc
 9421 ataattaaaa taaacactaa atttcagttt aaagtttact gaaaataaat atgtattttt
 9481 tattccctat ttaagctttg aatcccctga cttcctatac cattaccact gtcctagttc
 9541 aggttcatgt tgtttttttac tttaattgtt atcacagtct cttaacattt ctccctatgt
 9601 tctccagtcc tgtaggtgct aaatctgacg tggtcacttc tcagcttgga atccttcagt
 9661 gcaccaccac agccttgaac tacatatttg aaatacatat ttattttcag taaactttaa
 9721 actgaaattt agtgtttatt ttaattatgc ttgtaggcga tacaccacaa taatatgaag
 9781 agaacctttg actttgtcgt caataaaaag tcccttgagg ggacttcaga tgtaagtccc
 9841 ttagctgctc gttaaaactc ccccaggctg acccaataca caatcttgac tttaaaccac
 9901 ttgtcattct aaatcactag catttcctgg aaaaaaaagc catttttcct tcagggctaa
 9961 gctcagggac caattctgtg tcaccttctt tgaatcctga tgatattcac ttctttattt
10021 gacctgattt attgggcccc agacaccatg ctgagtgttg gggattcagc tctggacaat
10081 gtcaaatgtc agtcctgcct ttcagatcct ttctactggg tgagccctgg agtgctggtt
10141 ctcctcgcgg tgctgcctgt gctcctcctg cagatcactc ttggcctcgt cttcctctgc
10201 ctgcagtaca gactgagagg tacagggcag agggtgggtg gatcaggatc ctttctttaa
10261 atgagctggc ttcttggagc tacaccactt aacatgtatt tgtgagtgac ttctgggttc
10321 agaagttctt ctcactattg agtgataaag aaaaaaaata actccatgat gaaagagttt
10381 tacatcttac ggaatgcttt catatgaata atcggaccta gcatttccct atgagctaac
10441 tatgccatat agtaacccca ttttacagag gatacaactg aggccaggag tagttcagtg
10501 acttactcaa accgatataa cttataagtg gtagagctga ggcctctgta tcatacctag
10561 cagctccatg caacttggga gagtgtgagc ttcgaagtca gacaggtcta ggctattagg
10621 agttttgaat aaagatactg aagtgaaagt ctctaccaca cagtaggcgt tcgaaaattg
10681 tttcctcttt ctccattcaa cactgaggac tcaggttcag ctgctgatga agctcctctt
10741 ttttgcctag agctttcatt ctgagccttc tcctcctacc aagtgtctcc ccaatgccag
10801 agcaggaaga gtcttcactc ctcccaatgc cccacctccc atttgttact aagaggagag
10861 gagaaagtag caaggagggt atggggaatg ttctggggga atgggtgttg gtgcgatcaa
10921 caacaaagtc ctttctctca ccttgaattc atcccagatg cctgcttgtt tacttcttcc
10981 acacaaaaaa aggccttcag ccctcatggc tgagcagaaa gaatctgaat gttagagtca
11041 ggcagcctgg gtttgaattc catctcaggt actgaactct atagcaaaat tcttagattc
11101 tccaagcttc agttgccttg tctgtcaaat agagaaaaca tccttcgtcc taaattgtag
11161 ggaggattaa agtcatgcaa agtgcctact acaaatccag tcacaaagta gctagctact
11221 cactaaatgt tcagctcctc cctcctcatt cagatgggaa gtggctttag ataaacaaag
11281 tggcaacgca gtgggctgga gcagctctgt gaactgagaa tccaagaaaa ggggcgaaga
11341 gcagctggga tgtattggat gcttgtgctg gcttggagca ttgctcacat tctttattcg
11401 ctattgtatc tagactatag ctagagaaag agccgcaacc attggcttta aatccagtgc
11461 tcttcctact ctcctgaggt tgtttccagg ctgcagagaa atagcctgca caaggggccc
11521 aggcgctggg tgtgggaggg tccccaccga gagccagaac atgcaggaac taaaatgttg
11581 ccttttttcta ttttaggaaa acttcgagca gagataggtg agttccagtc atcgtttctc
11641 ccaattcttg ccttttggtt ttttggcata acggaaatgg tcccattctt ggaccgtctc
11701 tccctctcaa taccctgttt tcccctcagt ttccctttct ctacagtggg tgtgtcgtgc
11761 ctagaacaag ttttaagtaa ttaaataaca aagactcagg ataaaaggat ccttttttgga
11821 gtgccctact aaatccattt ccatttgttt ctctttcaga gaatctccac cggacttttg
11881 gtaagttccg gcatgtctag gccctcccag gtcaacttgg tatttcactc tagttccagt
11941 cacctggggg aacaaggacc cctggctcct ggttgagtcc cttcctctct tctcttttct
12001 ttctttaaat aagaagtcat ttgcatttag gattggtaaa atcataataa aaatactcat
12061 gtactgtttt tatgtgccag gcactattct aactacttta caaaaacgtt atcttattct
12121 gtttaactcc ttatgcacat gatctctctt ttcaggaatg ccaaaacaga ggtaaataga
12181 tcgtttacac gtaaacctga tgtctggttg gggaggtgaa acaaacagaa acaagacaca
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FIG. 12 (cont.)

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12241 actgtatcac ctgtacttat atttctgctt tacaaactca ggatgtttcc atgagtacag
12301 aacatgacta atcagagaag acctcataga ggaatagaaa agccaccaag ccccactagg
12361 aattgacccc tcaaggacat ggtttctagc ctttttgttc actgcagatt gcccaatgcc
12421 taaagataat ggcaacagaa gagcacccaa atatttgtta gataaatgtt gcagacacta
12481 gaaggtgtca ttagggcaca gatggtacct tctctgagca aacttccttc acagctcctc
12541 ctcccgaggc tgtaggtgac tctactcttg tcacctggca cacagagttc tatcgtacga
12601 tttaggaaat tagaccagtg tgtggaccac acacacacac atctttacac acccaaagag
12661 gaggaatagt atctttgttt tggaggactt gactatgaaa ggtcttaact ccttttttgta
12721 ccatgaatct ctctggcact ccagtgaagt ctaaaggacc cctttgcaga atgtttttaa
12781 atatacacat aaaatagaac acataggatt gcaaaaacaa tcattgtact aaaatacagt
12841 tatcaaccga taatcacatt tgtgatatag taacataaat gtttcttttt ttttttttg
12901 gaggcagagt ttggctcttg tcacccaggc tggagtgcaa tggcgcgatc taggctcact
12961 gaaacctctg cctcccgggt tcaagcgatt ctcagcctcc tgagtagctg ggattacagg
13021 tgcccgccac cacacccagc taatttttgt atttttagta gagactaggt ttcaccaggt
13081 tggccaggct ggcctcgaac tcctgacctc aggtgatcca cctgccttgg cctcccaaag
13141 tgctgggatt acgggcatga gccaccgtgc ccggccataa atatttcttt agccaaagta
13201 atacattaag taatgtagca gcaagtctaa taacctgtaa tttctttctt tctttctttc
13261 tttctttttt tttgagatga agtttttttg agatggagtg caatggcaca atctcggctc
13321 actgcaacct ccacctcctg ggttcaagcg attctcctgc ctcagcctcc caagttgctg
13381 gaactacagg cgcatgccac catgcccagc taatttttgt atttttagta gagacggggt
13441 ttcaccatgt tggccaggct ggtcttgaac ccctgacctc aggtgatctg cctgccttgg
13501 ccttccaaag tgctgggatt acaggcatga gccaccaggc ccagcccaat aacctttaat
13561 ttcaacatac taataaacat aaacagtatt tcaagatttc tgcaataact ctaatgggaa
13621 tgaaaacatc tgtggcttcc attggtaatt aagtcacagg tactgctcat attgtggtta
13681 gttgtaaaat gttttggttt gttttgtttt ttccaagact tgggggaatg ggtgttggtg
13741 ggatcaacaa gagtcttgct ctgtggccca ggctggagtg caggggcagg atcttggctc
13801 actgcaacct ccgcctccca ggttcaagcg attctcctgc ctcagcctcc tgagtagctg
13861 gcattacagg catgtgccac cacgcccagc taatttttac atttttagta gagatggggt
13921 ttcaccatgt tggcctggct ggtcttgaac tcttggcctc atgatccacc cgtctcggac
13981 tcccagagtg ttgggattac aggcatgagc caccacacct ggcagttgtt acatttttaa
14041 tgaaagaaaa tgttaaatcc agttattgaa aataaggagg cagtactttt ctcatccaag
14101 ttcatggact ttctgaattt tgtccccaga gtcctttggt gttctaggac cccaggttaa
14161 ggaacccaaa aagacaggtg ggtggggcat gaggggggaac acatgttaat ccctgtttgt
14221 tctggtgaac aattcagatc cccactttct gagggtgccc tgctggaaga taaccctgtt
14281 tgtaattgtg ccggttcttg gacccttggt tgccttgatc atctgctaca actggctaca
14341 tcgaagacta gcaggtgcag tggctgggca gcaggcaaga ccaccaaata gtgggggacc
14401 aagtcagctc tgaatgggaa gccaaaagag aatagaacca ggactcaaga ttaggggagc
14461 tgggatttcc ttattcctct gtccccatgc ccaaccccag gctcttctga gaaactgtga
14521 agagaaccac ttactggatc tgtgggatcc cccagtggaa agggcagtgt gggtcactcc
14581 aaatgtccat agggaggatg tggggaaggt gctattcatc ttccactaat cacatatttg
14641 tttctttttg ttttcagggc aattccttga agagctacgt aagttctctt ctctctgtta
14701 taagcagaga ataaaaagcc aggaaaggga gacagaagca acaagaggaa gaggcgggct
14761 attgagggat cacattccca gaggaaagga ggagctggag agcctgggtg gagggaagac
14821 tcctcctggg aggtagaggg caaagaagcc agctgttaga gacacattta caggtggcag
14881 agaagctgga ggcactccta tctgccacct gatccattcc tccttcactg cccctaagca
14941 ggaatccaac cctagctggt ctcattgccc attccacagc aactgcccag tgcctcacct
15001 ctcagatcaa ccattgaggc aggaatggag acaagatgac cccaagggct tttcttctcc
15061 ctagttcaat ggttttatga tacaaactac tgacatacgt ttttcaagtt attttctcct
15121 tcttctagga aatcccttct gagtgatgtc acatcttggc aggggtggag gagagcctgg
15181 ttgcccaggg atttgtcctt ggggacatct catccatcaa gttgcacact cactggcatc
15241 tttgctatgg ggacattcca atttgcactt tcaggaacac tctgaattcc aagtagaatt
```

FIG. 12 (cont.)

```
15301 gatttccctt cttctgtcat ctacctttc tcttcatttt cccattttta ttacccttct
15361 ttccatttct ctctccagtc ttccacctgg aagccctctc tggctaagga caggcaggtg
15421 cccctctctc catcagagga cacctgtact ggagagcaac acaggatggt ctctgccatg
15481 aactggaggc caggaatctc ctcactgaaa attacagtat ggtaactttg caaatggtgg
15541 ttgtttcttc caagactcca gccctgattg cgcaaaactg aaaggcatgt gaagggaagg
15601 aagaggaaga gtgcaaaaca ttgaagagag agctgagtga gctgaagagt gaggatatga
15661 gtagccccaa cccaaacctg gagatgggga gaaacctaca gaatactagc cagagctcct
15721 ccttgtcttg gcagcctact agggacctgg ggaagcaaaa acgaaagctg ggcaacatgc
15781 ctgctttaga atgttttcct tctacttaca catcttccac aggtctcaga atctttcctt
15841 cctctcatcc ttttctccta tctacatatc tatcagagta tccactgttt attcaacaac
15901 tactacttga tggtcagaca caaacaaaca agctaggtgc taattaataa agatacgagt
15961 tttggccggg tgcggtggct cacgcctgta atcccagcac tttgggaggc cgaggcgggc
16021 gaatcacgag gtcaggagtt caagaccagc ctggccaaca tggtgaaacc ccatctctac
16081 taaaaataca aacaattaac tgagcatagt ggtgggcacc tataatacca gctactccgg
16141 aggctgaggc aggagaatcg cttgaaccca ggaggcagag gttgcagtga gctgagatcg
16201 cgccactgca ctctagccgg agtgacagag taagactctg tctcaaaaat aaataaataa
16261 ataaataaat aaataaataa ataaataaaa aataataata caagttttca taagcacact
16321 tctaacccct tgtcttttat gtatttcctt ccttatccac gcacctgtct ccctctactc
16381 cagcctcatt accccagagg tcagtcctca ggaaaactaa acacaaagaa agagctcagt
16441 cagaaaggcc atttatttat gtttcaagat gctcactgcc tcctttgttt tgtctccttt
16501 gcaggccttc tctcttaggc ctcttctcct gggggtatgg atcctggggg gagattgatc
16561 acctccatgc ttccattcct ccccagccat agtggggaca tcatgagaga agccaagcca
16621 ctggcccagg atcacccggc atttatggtg gctgctctgg cacaggtcct tgcctttata
16681 gcccctccag tgatccataa ggccctcttt ctccccaaag gagaggtcac agatagggca
16741 aaggtagctc ttctgcttcc agtgggtctg ctggtgtctg accagcctgg aaaatgagct
16801 gaaagacttg ctgcaatgga agcagtagtt gggcggctct gtgaggtggc ccttctggtg
16861 tctggagaga taggatttct tgctaaaagt caaagaacaa tgggggcaac agaagacatt
16921 gagtcttgag ggcttcactg gatgagagtt ggatctggca tcctgacaga gggttccagt
16981 gatgggtgcc tgggtcctgg tcacaggtgc ttggttctta agtacagatg cctggttctg
17041 ggccatagga ccctcagttc taaatatggg ttcctgggac ctggccactg gtgcatggtt
17101 cacatccaaa agcccctgga tggacctctg gcttctggcg atgggtgtct ggaattcagc
17161 ctgggtgcct ggaatcctca aagtacactc ctggtttcca tccactggct cctggttttg
17221 gtgtatcttc tggtggcgtt tgagctcaga ctggtcccgg aagctcttcc cacacacaga
17281 gcatgaatgg ggccggtaac ccagatggac gcggcggtga cgacttagtc cagaagcatc
17341 acagtaggtc ttgtcacaga gcgtgcaaca gaagggcctc tccccaagat gcatgcgtct
17401 gtgatagctg agggacttgg ggctccgaaa caacttccca cactgactgc agctgttagt
17461 cagcttggga ttgtgaacaa actggtggct atagaggtag gagcgcctgc tgaaacattt
17521 ggcacaggtg tagcaaaa
```

FIG. 12 (cont.)

```
  1 tttgtatgtc attgcaggat tcatgctttc cagtgtgtca tctatggaac tgcctctttc
 61 ttcttccttt atggggccct cctgctggct gagggcttct acaccaccgg cgctgtcagg
121 cagatctttg gcgactacaa gaccaccatc tgcggcaagg gcctgagcgc aacggtaaca
181 gggggccaga aggggagggg ttacagaggc caacatcaag ctcattcttt ggagcgggtg
241 tgtcattgtt tgggaaaatg gctaggacat cccgacaagg tgatcatcct caggattttg
301 tggcaataac aaggggtggg gggacaa
```

FIG. 13

SEQUENCE LISTING

```
   1 ctgtatcagt gctcctcgtc gcctcactgt acttcacgga agagacttgg ttgactggcc
  61 acttggagcg gaatcaggag acattcccaa ctcagagaga ctgagcccta gctcgcccac
 121 ttgctggaca agatgatatt ccttaccacc ctgcctctgt tttggataat gatttcagct
 181 tctcgagggg ggcactgggg tgcctggatg ccctcgtcca tctcagcctt cgagggcacg
 241 tgtgtctcca tcccctgccg tttcgacttc ccggatgagc tcagaccggc tgtggtacat
 301 ggcgtctggt atttcaacag tccctacccc aagaactacc cgccagtggt cttcaagtcc
 361 cgcacacaag tggtccacga gagcttccag ggccgtagcc gcctgttggg agacctgggc
 421 ctacgaaact gcaccctgct tctcagcacg ctgagccctg agctgggagg gaaatactat
 481 ttccgaggtg acctgggcgg ctacaaccag tacaccttct cggagcacag cgtcctggac
 541 atcatcaaca cccccaacat cgtggtgccc ccagaagtgg tggcaggaac ggaagtagag
 601 gtcagctgca tggtgccgga caactgccca gagctgcgcc ctgagctgag ctggctgggc
 661 cacgaggggc taggggagcc cactgttctg ggtcggctgc gggaggatga aggcacctgg
 721 gtgcaggtgt cactgctaca cttcgtgcct actagagagg ccaacggcca ccgtctgggc
 781 tgtcaggctg ccttccccaa caccaccttg cagttcgagg gttacgccag tctggacgtc
 841 aagtaccccc cggtgattgt ggagatgaat tcctctgtgg aggccattga gggctcccac
 901 gtcagcctgc tctgtggggc tgacagcaac ccgccaccgc tgctgacttg gatgcgggat
 961 gggatggtgt tgagggaggc agttgctgag agcctgtacc tggatctgga ggaggtgacc
1021 ccagcagagg acggcatcta tgcttgcctg gcagagaatg cctatggcca ggacaaccgc
1081 acggtggagc tgagcgtcat gtatgcacct tggaagccca cagtgaatgg gacggtggtg
1141 gcggtagagg gggagacagt ctccatcctg tgttccacac agagcaaccc ggaccctatt
1201 ctcaccatct tcaaggagaa gcagatcctg gccacggtca tctatgagag tcagctgcag
1261 ctggaactcc ctgcagtgac gcccgaggac gatggggagt actggtgtgt agctgagaac
1321 cagtatggcc agagagccac cgccttcaac ctgtctgtgg agtttgctcc cataatcctt
1381 ctggaatcgc actgtgcagc ggccagagac accgtgcagt gcctgtgtgt ggtaaaatcc
1441 aacccggaac cctccgtggc ctttgagctg ccttcccgca acgtgactgt gaacgagaca
1501 gagagggagt ttgtgtactc agagcgcagc ggcctcctgc tcaccagcat cctcacgctc
1561 cggggtcagg cccaagcccc accccgcgtc atttgtacct ccaggaacct ctacggcacc
1621 cagagcctcg agctgccttt ccagggagca caccgactga tgtgggccaa aatcggccct
1681 gtgggtgctg tggtcgcctt tgccatcctg attgccattg tctgctacat cacccagaca
1741 agaagaaaaa agaacgtcac agagagcccc agcttctcag cgggagacaa ccctcatgtc
1801 ctgtacagcc ccgaattccg aatctctgga gcacctgata agtatgagag tgagaagcgc
1861 ctggggtccg agaggaggct gctgggcctt agggggaac ccccagaact ggacctcagt
1921 tattcccact cagacctggg gaaacgaccc accaaggaca gctacaccct gacagaggag
1981 ctggctgagt acgcagaaat ccgagtcaag tga
```

FIG. 14

```
  1 masqkrpsqr hgskylatas tmdharhgfl prhrdtgild sigrffggdr gapkrgsgkd
 61 shhpartahy gslpqkshgr tqdenpvvhf fknivtprtp ppsqgkgrgl slsrfswgae
121 gqrpgfgygg rasdyksahk gfkgvdaqgt lskifklggr dsrsgspmar r
```

FIG. 15

SUBSTITUTE SHEET (RULE 26)

```
  1 mglleccarc lvgapfaslv atglcffgva lfcgcgheal tgtekliety fsknyqdyey
 61 linvihafqy viygtasfff lygalllaeg fyttgavrqi fgdyktticg kglsatvtgg
121 qkgrgsrgqh qahslervch clgkwlghpd kityaltvvw llvfacsavp vyiyfntwtt
181 cqsiafpskt sasigslcad armygvlpwn afpgkvcgsn llsicktaef qmtfhlfiaa
241 fvgaaatlvs lltfmiaaty nfavlklmgr gtkf
```

FIG. 16

```
  1 maslsrpslp sclcsfllll llqvsssyag qfrvigprhp iralvgdeve lpcrispgkn
 61 atgmevgwyr ppfsrvvhly rngkdqdgdq apeyrgrtel lkdaigegkv tlrirnvrfs
121 deggftcffr dhsyqeeaam elkvedpfyw vspgvlvlla vlpvlllqit lglvflclqy
181 rlrgklraei enlhrtfdph flrvpcwkit lfvivpvlgp lvaliicynw lhrrlagqfl
241 eelrnpf
```

FIG. 17